AMENDMENTS TO THE CLAIMS

Claims 1-3 (Cancelled)

4. (Currently Amended) ~~The photodiode of claim 3 wherein~~ A photodiode comprising:

a first region of semiconductor material having a first conductivity type and a first dopant concentration;

a second region having a second conductivity type and a second dopant concentration, the second region lying over and contacting the first region of semiconductor material at a first junction, the first junction forming a first depletion region, the first depletion region absorbing electromagnetic radiation that represents blue light, and generating blue electron-hole pairs in response to absorbing the electromagnetic radiation that represents blue light; and

a third region having the first conductivity type, the third region lying over and contacting the second region at a second junction, the second junction forming a second depletion region, the third region ~~has~~ having a first portion that has a first dopant concentration, and a second portion that has a second dopant concentration that is substantially greater than the first dopant concentration, the second depletion region absorbing no electromagnetic radiation that represents blue light.

Claims 5-20 (Cancelled)

21. (New) A photodiode comprising:

a first semiconductor region of a first conductivity type;

a second semiconductor region of a second conductivity type, the second semiconductor region lying over and contacting the first semiconductor region at a first junction, the first junction forming a first depletion region;

a third semiconductor region of the first conductivity type, the third semiconductor region having a top surface, a first portion, and a second portion that lies between the first portion and the top surface, the first portion having a dopant concentration substantially greater than a dopant concentration of the second portion, the third semiconductor region lying over and contacting the second semiconductor region at a second junction, the second junction forming a second depletion region; and

a layer of insulation material lying over and contacting the third semiconductor region.

22. (New) The photodiode of claim 21 wherein the first and second portions include boron.

23. (New) The photodiode of claim 22 wherein the first portion further includes another Group IIIA element.

24. (New) The photodiode of claim 22 wherein the first portion further includes indium.

25. (New) The photodiode of claim 21 wherein the second depletion region absorbs substantially no electromagnetic radiation that represents blue light.

26. (New) The photodiode of claim 25 wherein the first depletion region absorbs electromagnetic radiation that represents blue light, and generates blue electron-hole pairs in response to absorbing the electromagnetic radiation that represents blue light.

27. (New) The photodiode of claim 21 wherein the first and third semiconductor regions are connected to a common potential.

28. (New) The photodiode of claim 27 wherein the first depletion region responds to visible light and the second depletion region responds to blue light.

29. (New) The photodiode of claim 21 wherein the third region has a third portion, the first portion lying between the second and third portions, the dopant concentration of the first portion being substantially greater than a dopant concentration of the third portion.

30. (New) The photodiode of claim 29 wherein the first, second, and third portions include boron.

31. (New) The photodiode of claim 30 wherein the first portion further includes another Group IIIA element.

32. (New) The photodiode of claim 30 wherein the first portion further includes indium.

33. (New) The photodiode of claim 29 wherein the second depletion region absorbs substantially no electromagnetic radiation that represents blue light.

34. (New) A photodiode comprising:

a first semiconductor region of a first conductivity type;

a second semiconductor region of a second conductivity type, the second semiconductor region lying over and contacting the first semiconductor region at a first junction, the first junction forming a first depletion region, the first depletion region absorbing electromagnetic radiation that represents blue light, and generating blue electron-hole pairs in response to absorbing the electromagnetic radiation that represents blue light; and

a third semiconductor region of the first conductivity type, the third semiconductor region lying over and contacting the second semiconductor region at a second junction, the second junction forming a second depletion region, the third semiconductor region having a first portion that has a first dopant concentration, and a second portion that has a second dopant concentration that is substantially greater than the first dopant concentration, the second depletion region absorbing substantially no electromagnetic radiation that represents blue light.

35. (New) The photodiode of claim 34 wherein the first and third semiconductor regions are connected to a common potential.

36. (New) The photodiode of claim 35 wherein the second portion includes a plurality of Group IIIA elements.

37. (New) The photodiode of claim 4 wherein the first and second portions include boron.

38. (New) The photodiode of claim 37 wherein the first portion further includes another Group IIIA element.

39. (New) The photodiode of claim 37 wherein the first portion further includes indium.